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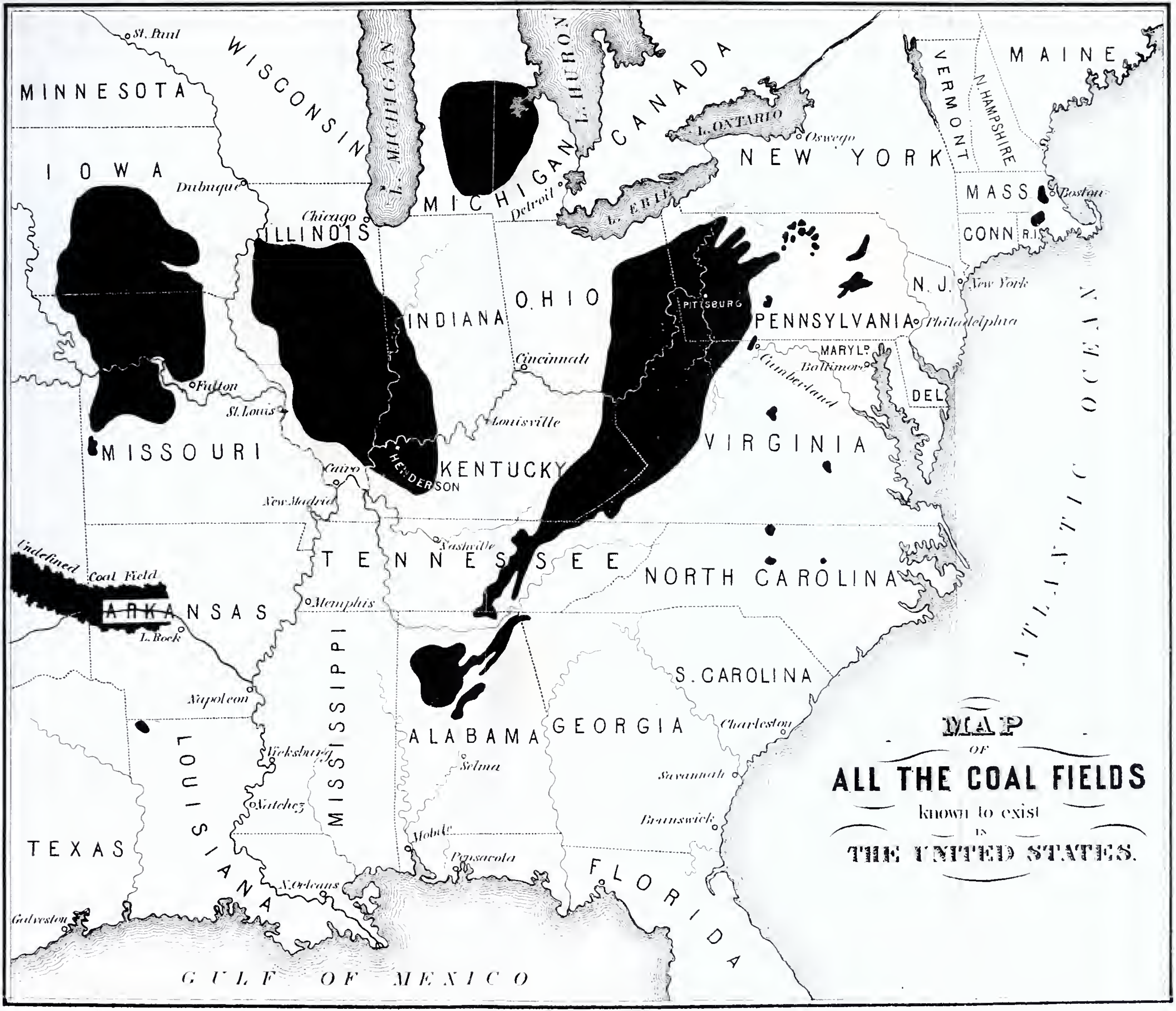

MAP
OF
ALL THE COAL FIELDS
known to exist
IN
THE UNITED STATES.

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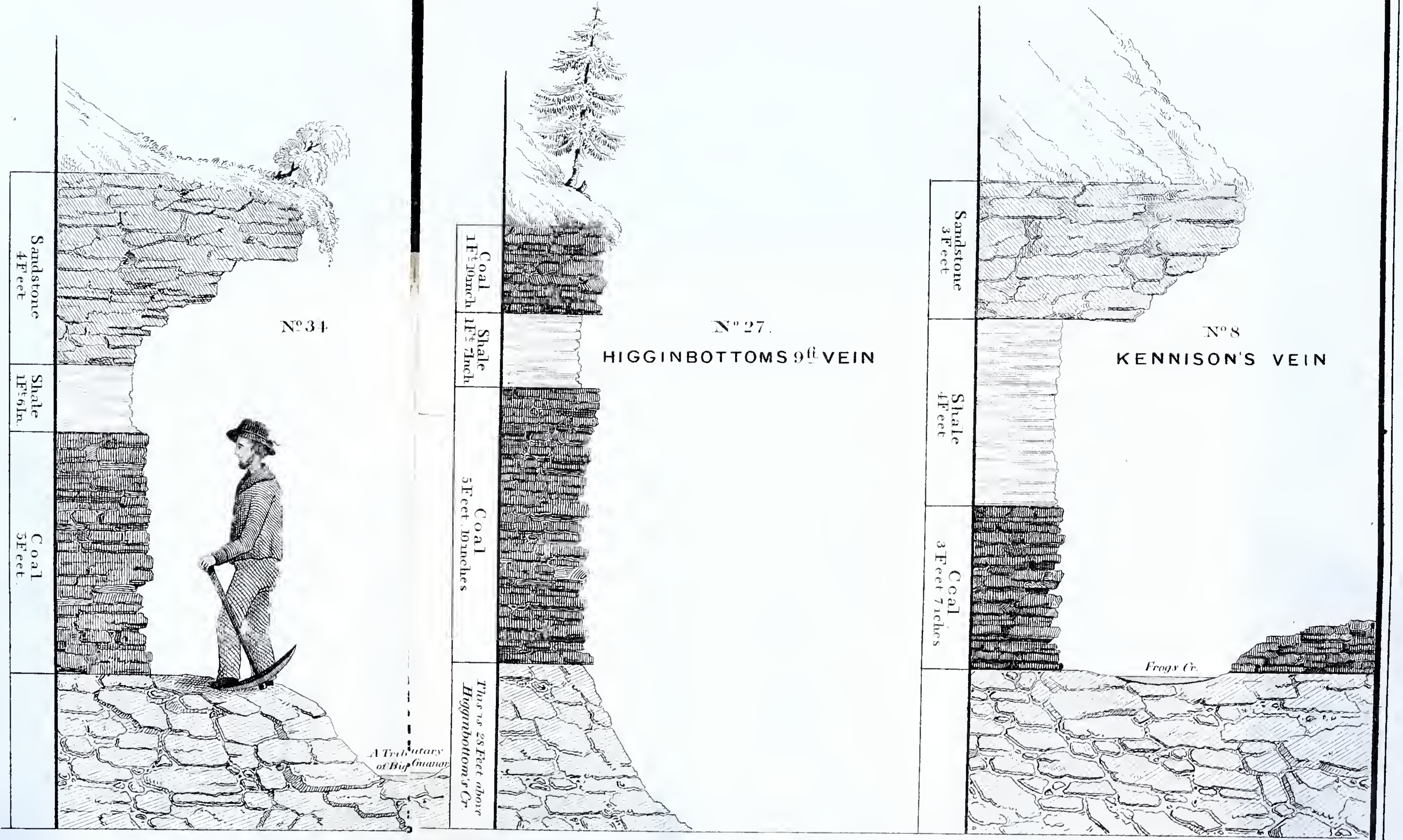
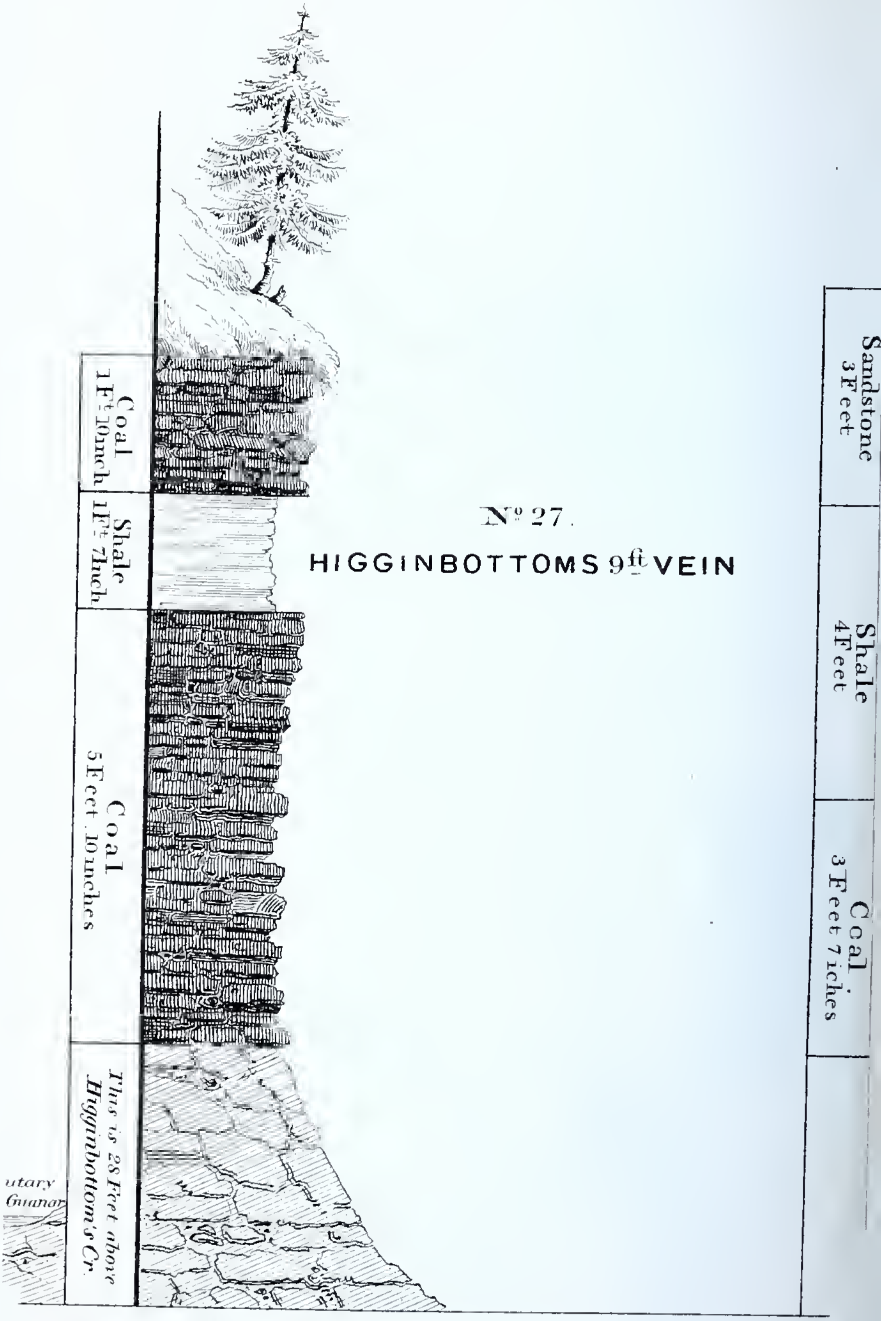
BY PROFR JOHN LOCKE.



CROPPINGS OUT OF SOME OF THE COAL ON THE LANDS OF THE
GREAT KANAWHA Co

SARONY & Co LITH. N.Y.



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GREAT KANAWHA Cº

17
19

PROSPECTUS

OF

ONE HUNDRED THOUSAND ACRES

OF

MOST VALUABLE COAL LANDS

ON THE

NAVIGABLE WATERS

OF

GREAT KANAWHA RIVER,

IN PUTNAM COUNTY,

Western Virginia,

NEAR THE OHIO RIVER.

NEW YORK:
PRINTED BY R. CRAIGHEAD,
Caxton Building,
81, 83, AND 85 CENTRE STREET.

1857.

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19

COAL LANDS

SITUATED ON THE NAVIGABLE WATERS OF THE GREAT

KANAWHA RIVER.

The coal interest is now, and is destined to continue to be, one of the largest and most important interests of the United States.

No more safe or profitable investments can be made in any country, than those which are now made here in good coal lands, favorably located. These lands constitute a mine of wealth, which will require generations to exhaust.

Notwithstanding the abundance of timber in many portions of our country, coal is used in immense quantities, to warm our people, to light our dwellings, to propel our almost countless number of steamers, which float on our numerous rivers and lakes, and whiten every sea and ocean—to drive the myriads of spindles and looms, which are enriching our country, and to keep in motion the vast number of furnaces, forges and foundries, which are springing up like magic, and developing the vast mineral resources of our land. Over *nine millions of tons* of coal were consumed in this country the last year, and the consumption is increasing at the rate of at least twenty per cent. per annum. With such an increase what amazing results will be witnessed before the year *nineteen hundred.*

It is by no means a matter of course, however, that all investments in coal lands will be equally profitable, or, indeed, will be profitable at all. Before investing, parties should be well advised of *three* things:

1. They should be well assured in regard to the *quantity* and *quality* of the coal, where investments are proposed to be made.

2. That the location of the property is such as to secure a *cheap and reliable water communication* to the place or places of market.

3. And that there is a *reliable market at remunerating prices.*

The anthracite coal fields of the United States are confined to Eastern Pennsylvania, and are of immense value, both on account of the quality of the coal, and the easy accessibility to Atlantic tide water, and the unlimited scope of market thereby thrown open to these coals.

All the other coals of this country are classed as bituminous, and vastly exceed in quantity the anthracites of Pennsylvania. They are embraced mainly in *five* great fields, *one* extending over Western Pennsylvania and Virginia, and Eastern Ohio and Kentucky; the *second* over a small portion of Western Kentucky, Southern and Western Indiana, and a large portion of Illinois; the *third* over Northern Missouri and Southern Iowa; a *fourth* in Michigan; and the *fifth* a small field in Alabama. The location of the above may be seen by referring to Map No. 1.

Of these fields, by far the largest and the most valuable is the first, or that which is usually called the Pittsburg coal field, embracing Western Pennsylvania and Virginia, and Eastern Ohio and Kentucky. The property to which it is the object of this pamphlet to call attention, is situated near the centre of this great coal field, in Putnam county in Western Virginia, on the navigable waters of the Great Kanawha River, thirty-five miles from its junction with the Ohio, at Point Pleasant, 265 miles below Pittsburg, and 200 miles above Cincinnati.

The relative position of the property is shown on Map No. 2. The survey of the tract contains *one hundred thousand acres, more or less* (as shown by Map No. 3), and while the whole tract has been scientifically explored and examined by the most eminent Geologists of this country, Dr. John Lock and Son, of Cincinnati, Ohio, and Rev. Dr. Edward Hitchcock, late President of Amherst College, Massachusetts, that portion of it bordering on the River has been more particularly examined.

In regard to the *quantity* of coal contained in the above tract, though it may not underlay the whole, it may be considered *practically inexhaustible.* More than forty openings have already been examined on a few thousand acres of the tract most favorably situated to the river, and the veins vary in thickness from *four* feet to *ten* (See map No. 4, giving a profile view of a few, though not the largest veins). Two beds of about *thirteen* feet each occur beneath the level of the river, as shown by borings for salt in at least two places. If six feet should be the average of those veins which crop out on the hill sides, and they will equal this—then one acre would contain 261,360 cubic feet of solid coal, or the same number of *bushels of mined coal;* or, allowing liberally one-third for waste, 174,240 saleable bushels to the acre. Now, if we take but *three thousand* acres, this will give 5,227,200,000 saleable bushels of coal; or, as thirty bushels are allowed to the ton, it will give 522,720,000 tons. Should the company mine but 300,000 tons per annum, it would require more than 58 years to exhaust this small tract alone, to say nothing of those valuable veins which are below the above, and which, added to the others, would make the quantity of coal on five to fifteen or twenty thousand acres, fronting on the river, in reality, *practically inexhaustible.*

The examinations have been so thorough, that there cannot be a doubt as to the quantity of the coal on the above lands.

In regard to its *quality*, there is also the most abundant and satisfactory evidence that it is *actually superior* to most or all the bituminous coals of the western states. The Youghiogheny, or Pittsburg coal, has always been regarded as the best bituminous coal for most purposes, yet introduced to market west of the Alleghany mountains.

Some bituminous coals, although of a firm consistency when first mined, soon begin to disintegrate, and fall to pieces when exposed to atmospheric influences: so much is this the case with some coals, that they will not bear the handling to which they must be subjected in transportation, and, consequently, they are scarcely entitled to rank among commercial coals. The coal taken from the mines described in these pages, is not in the slightest degree liable to this objection; they have been exposed to the alternations of rain, heat, and frost, without any tendency to disintegrate.

The value of coal as a fuel, or as a generator of steam, depends very essentially upon the proportion of *fixed carbon* which it contains, and any housekeeper knows the annoyance which many coals produce by yielding an undue excess of ashes.

A careful analysis of the coals on these lands has been made by Dr. Trail Green, Professor of Chemistry in La Fayette College, Easton, Pa. With the view of making a comparison between this and other coals, the names of which are well known in western commerce, the following results of analyses by competent chemists are here presented:—

	Name of Analyst.	Bituminous and other volatile matter.	Carbon.	Ashes.
Calloway Cannel Coal, mean of two tracts.	Prof. D. D. Owen.	39.45	31.08	28.75
Pomroy, 268 miles below Pittsburg, on the Ohio.	Prof. D. D. Owen.	39.29	47.72	12.99
Wheeling, 74 miles below Pittsburgh.	Prof. W. R. Johnson.	44.04	52.03	3.93
Youghiogheny, or Pittsburg coal.	Prof. D. D. Owen.	36.46	60.14	3.40
Henderson, Ky.	Prof. F. A. Gunth.	42.56	54.29	3.15
Breckenridge, Ky.	Prof. B. Silliman.	64.29	27.16	8.47
Hawesville, Ky.	Prof. D. D. Owen.	47.00	46.00	7.00
The Putnam County coal, described in these pages.	Dr. Trail Green.	32.80	60.27	6.93

Thus, of the above list of eight of the best coals of the West, it appears that in point of *carbon* this coal is superior to all, and with three exceptions has the smallest amount of ashes.

The following are the analyses of three specimens of English coals, viz.:—

	Specific gravity.	Bituminous and other volatile matter.	Carbon.	Ashes.
Liverpool, . . .	1¼	39·96	54·90	5·10
Newcastle, . . .	1¼	35·83	57·00	7·17
Scotch, . . .	1½	39·19	48·81	12·00

Thus it is seen that the coal from these lands is actually superior to all these specimens of English coal—the kinds usually imported into this country or to Cuba. In point of carbon the Welsh coal is superior to all others. The above tables are left to speak for themselves. The following is the letter of Dr. Green communicating to Dr. McLean the result of his analysis of this coal, viz.:—

EASTON, Pa., *May* 15, 1857.

Dear Doctor,—

I finished this afternoon the analysis of the coal which you committed to me taken from the mines on the Big Guarnar, on the Kanawha River, in Putnam county, Va. I find the coal to be a beautiful variety of bituminous coal, of shining black lustre, quite compact, and of specific gravity 1·28. The mean of three analyses gives the composition as follows:—

Bituminous and other volatile matter, ...	32·80
Carbon, ...	60·27
Ashes, ...	6·93
	100·00

The ashes are of a light gray color; coke shining black; the analysis shows it to be a very superior coal for producing heat and generating steam, as well as for producing illuminating gas.

Yours, &c.,

TRAIL GREEN,
Prof. of Chemistry, Lafayette College,
Easton, Pa.

The following is the report of the Rev. Dr. Hitchcock in regard to these coal lands, viz. :—

REPORT OF PRESIDENT HITCHCOCK.

Having visited the valley of the Kanawha, for the purpose of examining the coal lands owned by the late Matthias Bruen, of New York, situated on the Great Kanawha River, in Putnam county, Va., I present the following as the result of that examination. As these lands have been carefully surveyed by two gentlemen, I propose to give the results of my examinations under several distinct heads.

I remark, first, upon the great regularity and simplicity of the coal region along the Ohio and Great Kanawha rivers.

We visited some of the coal openings at Pittsburgh, and kept an eye open to the various beds, and their accompanying strata of sandstone, fire-clay and shale, along the Ohio, as far as the mouth of the Kanawha. Everywhere we were struck with the undisturbed horizontal position of the strata and the coal beds. In the anthracite regions of Pennsylvania one sees striking evidence in the inclined, folded, and distorted condition of the strata and the enclosed coal beds, that they have been subject to powerful upheaving, folding, and crushing agencies; and it often requires long and careful study to find out the true position and relation of the coal beds. But in the western part of the Alleghany or bituminous coal fields, stretching southwesterly 750 miles, we can trace the same bed over hundreds of miles. Professor H. D. Rogers has traced, with much probability, the "Pittsburgh Seam," as it is called, through Pennsylvania, Virginia and Ohio, and over an elliptical area 200 miles long and 100 miles broad, embracing 14,000 square miles.

The practical inference I would draw from such a fact is, that when we find a good workable bed of coal in such a region, we may with great confidence presume that it spreads over a wide area. Beds do, indeed, sometimes grow thinner and thicker to some extent; but in general we may conclude that in some directions they will reach a great distance.

Another important inference from the almost horizontal position of the rocks is, that generally we can find more than one bed of coal, lying one above the other, in hills of moderate elevation, or by penetrating a little depth below the level of the valleys.

In 1853, Professor Haldeman stated, that "on the Kanawha and its tributaries five veins of common bituminous coal, and two of cannel coal, are found, all capable of being worked, and above the bed of the river."—*Taylor's Statistics of Coal*, p. 286—1855.

That one or two beds, one of them of great thickness, occur beneath the bottom of the river, is well known, as borings for salt, in at least two places, passed through one seam nearly thirteen feet thick. But at present, beds below the river are regarded as of little importance, since there is enough coal above the river level to supply the demand probably the next one hundred or two hundred years. Yet the time will come—sooner, perhaps, than we now imagine—when these deeper beds, especially where only 40 to 60 feet below the streams, will be put in requisition to meet the public demand.

Another important effect resulting from the horizontal position of these coal beds is, that in working them ventilation is easily effected, and fire-damp rarely collects to a dangerous extent.

But this horizontality of the beds is not exact. Almost everywhere there is a slight dip, enough to make drainage quite practicable, and thus is secured a great saving of expense and labor in getting rid of the water.

I would, secondly, confine my remarks mainly to the geological position and character of the coal beds upon a tract of 3,000 *acres.*

Dr. Gill's researches were confined almost entirely to this tract; but Dr. Locke examined a much wider region, especially along a line running N. W. and S. E. from Ventrue's mine on the west side of Kanawha, to McClennehan's mine on the Pocotalico. Facts drawn from so wide a region are important to enable us to judge more accurately of those derived from the 3,000 acre tract.

Dr. Locke obtained the heights above the Kanawha by a barometer. In the following list of coal beds, given by Dr. Gill, the heights were obtained by levelling—a much more accurate method.

		Thickness.	Height.
On the first right hand of Big Guarnar,	No. 1,	4 ft. 0 in.	124 ft. 0 in.
On the second right hand of Big Guarnar,	No. 2,	4 " 7 "	94 " 8 "
On do., opposite side,	No. 3,	4 " 4 "	93 " 4 "
Branch of Two Mile Creek, or Null's Run,	No. 4,	3 " 2 "	130 " 3 "
On Null's Run,	No. 5,	4 " 0 "	137 " 0 "
Left Fork of Sulphur Hollow Branch of Higginbottom's Creek,	No. 6,	8 " 0 "	96 " 9 "
Bed of Rocky Hollow Branch,	No. 7,	6 to 7 ft.	79 " 0 "
Bed of Coal Hollow Branch,	No. 8,	5 " 7 "	75 " 0 "
Bank near Jonathan Higginbottom's,	No. 9,	10 ft. 6 in.	80 " 5 "
Old House Branch,	No. 10,	6 " 0 "	84 " 10 "
On Higginbottom's Creek,	No. 11,	6 " 0 "	73 " 10 "
Bed of Higginbottom's Creek, near Cabin Creek,		3 " 0 "	62 " 0 "

All the above, given by Dr. Gill, are upon a 3,000 acre tract which was very carefully examined, and are exposed in the banks of the various ravines, as are also those described by Dr. Locke. I visited as many of them as seemed desirable, and became satisfied of the following conclusions:

1. That most of these coal banks belong to a main seam of coal from three to ten feet thick, and extending over the whole of the 3,000 acre tract, except where ravines have been worn out deeper than the coal.

2. That the strata dip along with the coal beds at a slight angle north-westerly. Dr. Locke puts down the line of dip as N. 75° W., and the descent 12·5 feet per mile. Dr. Gill makes the dip northerly, but, as I understand his language, N. 68½° W.; but he does not give the average amount. If there is a slight difference of opinion between these gentlemen on this difficult point, it is of little practical importance, since both recommend essentially the same point for commencing operations.

3. That there is at least one other bed of coal, which shows itself below the main seam on Big Guarnar Creek, also near the Pocotalico. Possibly it will be found that some of the beds described by Messrs. Locke and Gill belong to a third, or even a fourth bed. But since the main seam contains enough for several generations to come, this is not a question of much importance. For the same reason it may be of little consequence to know, that by penetrating perhaps a hundred feet below the coast bed, another, thicker than either of those known, might be reached.

4. That a very convenient and accessible point for reaching and opening the main coal seam, and also the one beneath it on the same 3,000 acre tract, exists on the Big Guarnar Creek, only "*four-fifths*" of a mile from the Kanawha, and about 100 feet above it. From thence a drift might be carried across the whole of the 3,000 acre tract, and in such a direction (which could be ascertained as the work should proceed) that drainage might be secured without the use of pumps. As to the best point for entering the coal, Dr. Locke and Dr. Gill have given

the same opinion as I do. True, by carrying a railroad from three to five miles down Higginbottom's Creek and the Pocotalico, the coal beds could be reached in the more interior parts of the tract; but at present I see no reason for entering them on Higginbottom's rather than on Big Guarnar Creek.

The short railroad from the Big Guarnar to the Kanawha will convey coal to that river so far down the stream, that nearly all the dangerous rapids and shoals that have been so fatal to boats higher up will be avoided. From that point, indeed, navigation to Cincinnati, Louisville, &c., is often open some weeks longer during the winter, and also in the dry weather of summer, than to the coal beds above Point Pleasant, on the Ohio, or above Charleston, on the Kanawha.

5. That, upon the whole, I have seen no spot along the Kanawha, where an inexhaustible quantity of excellent coal can be reached so favorably as that beneath this 3,000 acre tract.

Thirdly, I will add a few remarks concerning the iron and salt of this region, as well as its forests.

I can only say, that the ore is excellent, so far as I can judge, and the only question relates to its quantity. I have seen at least two beds three or four feet thick, which appear to be mostly ore; and my impression is, that when experienced miners shall have explored this tract carefully, with this specific view, it will appear that there is no lack of quantity.

This question becomes important in its bearings upon the value of the wood that covers most of these hills and valleys. It is of the very best kind—*walnut*, *white oak*, yellow pine, &c. —and seems at present almost as exhaustless as the coal that underlies it. If the iron ore should be found abundant, and be wrought, there will not be found too much of it. If not wanted for this purpose, I am by no means certain that a portion of it, at least, will not find a profitable market at Cincinnati.

The yellowish sandstone of these hills, intervening between the beds of coal, forms an excellent and easily wrought building stone, and is easily obtained. Near the Red House I was shown a much finer kind, wrought into jambs and hearths, which I should prize very highly, and it seems to be abundant.

That salt springs exist beneath the coal rocks of this region, has been proved by boring in the vicinity of Red House, and also at Buffalo. Should such an enterprise ever be attempted here, the Company would find use for their wood and timber on their own premises.

Fourthly, I would bear testimony to the accuracy and fidelity of Prof. Locke and Dr. Gill in their reports.

I have not, indeed, followed them to every spot described in their reports. But wherever I have gone, I have found their statements strictly accurate. They were evidently not made from hearsay reports, but from actual inspection and measurement. I have not the pleasure of an acquaintance with Dr. Gill. But from long personal intercourse with Dr. Locke, I feel sure that he would not risk his high scientific reputation by any statements which he had not good reason to believe to be true.

CONCLUDING SUMMARY.

I thought it best to put upon paper at once the results of my examinations. I lay no claims to infallibility, and may be wrong in some of my conclusions. But on the following points my convictions are decided at present.

1. That the tract described in the preceding pages, is underlaid, probably over nearly all of it, by exhaustless beds of most excellent bituminous coal, from three to ten feet in thickness.
2. That these beds are easily accessible from the Kanawha river, by means of a railroad a mile long, and an easy grade.
3. That navigation from this point down the Kanawha and Ohio valleys, has no obstructions of consequence, less in fact than from any point higher up either of these streams.
4. That there is a large and increasing demand for coal in

the large cities along the Ohio, as well as from the numerous steamboats that ply over its surface. Of this point I was in doubt till I came west. But I am now convinced that no fear need be entertained that the market will be glutted, even if many more coal mines should be opened along these rivers, and that good coal, got out economically, will not fail to command remunerative prices.

Respectfully submitted,

EDWARD HITCHCOCK,

Pres't Amherst College, Amherst, Mass.

Red House, Putnam county, Virginia.

The following is a letter from D. Pratt, Esq., who accompanied Dr. Hitchcock:

Boston, Oct. 27, 1856.

Sir:—I have made much personal observation, accompanied by Dr. Hitchcock, of all coal lands from Pittsburgh to Cincinnati, as also of all coal lands on the Kanawha river. Without qualification, I state that the coal lands situated on the Kanawha river contain more and better coal than lands at and above Pittsburgh, and have a better water communication, being nearly 300 miles nearer the market demanding it.

You can so state of your own knowledge. I have spent three years on that subject, and have made such personal observation that enables me to say that the Kanawha Coal Lands are worth more for practical uses than the lands on the Upper Ohio, now selling at from $300 to $1,200 per acre. I cannot doubt but that any parties who may engage in that enterprise will make a large fortune. It is not speculative, but purely legitimate.

I remain,

Your most ob't serv't,

D. PRATT.

To the Rev. Dr. McLean.

That the quantity of coal in these lands is therefore practically *inexhaustible*, and that the quality is superior to most or all the coals of the West, *are facts established in the fullest and most satisfactory manner.*

2. But no matter how abundant and intrinsically valuable the coal may be, in order that investments in it may be profitable, its location must be such as to secure for it *a cheap and reliable water communication to market.*

Experience has abundantly proved that railroads can never compete successfully with water, and especially with river navigation, in the transportation of coal.

Even where coal is transported but a few miles by railroad the additional expense is such as would constitute a reasonable profit to those employing river navigation. Hence the great disappointment in expectations and profits often experienced by those who are obliged to construct even short railroads to their mines; the outlay always exceeds expectation, and the profits are proportionally diminished. The cost of transporting coal over *one hundred* miles of undulating railroad is estimated to be equal to the cost of drifting it 1200 miles down the channels of our navigable rivers. Even canal or slack water navigation, where the capacity is ever so great, in consequence of tolls and the use of horses and mules, is much more expensive than river navigation.

Nor does a moderate difference in distance from market, by river, make any sensible difference in the cost of delivering coal. Boatmen engage *for the trip* to New Orleans, or other points on the Ohio and Mississippi, without much regard to differences of a few hundred miles. Hence coal mines even much farther down the river, have no practical advantage over the mines of these lands.

This large tract of land lies in one body, has been owned in a body by a few parties only, for more than fifty years—having been in the possession of one gentleman about forty years. It is situated on the north-east side of the Great Kanawha river, direcly opposite to Winfield, the county town of Putnam county, and about thirty-five miles from Point Pleasant, where the Kanawha enters the Ohio. The accompanying maps, Nos. 2 and 3, will show the location of this rich coal tract, and its relative position in comparison with the other coal lands at Pomroy, West Columbia, Wheeling, Pittsburg, and also with reference to Cincinnati, and other markets down the river.

The Kanawha is a beautiful river, and one of the largest tributaries of the Ohio. Regular steamers ply on it daily, to and from Cincinnati and Galliopolis, ascending the Kanawha as far as Charleston, about 70 miles from the Ohio.

The Kanawha is always navigable for a distance of at least 40 miles from its mouth, whenever the Ohio is navigable below that point; and often coal can be taken from this property when the mines on the Ohio above Point Pleasant are inaccessible from low water. In regard to the navigation of this river, Professor D. T. Ansted, Fellow of Jesus College, Cambridge, England, a mining engineer, who came to this country and examined the coal lands on the Kanawha, in 1833, says,—"The Kanawha commencing at the falls where new river terminates, is about as available for the navigation of boats as any part of the Ohio above Point Pleasant."

The following certificates also from other reliable parties in regard to the navigation of this river, are here inserted, viz.:—

I, William Johnson, of Red House Shoals, Putnam county, Virginia, do hereby certify, that from the year 1837 to 1842, I was engaged in piloting flat-boats from the Kanawha Salt Works to the city of Cincinnati, Ohio; and from that time to the present, have owned, commanded and piloted steamboats on this river and on the Ohio river. The average depth of water during the summer season, or at an ordinary low stage of Kanawha river, is 4½ feet. This stage of water we call the boating season, which lasts about two-thirds of the year.

I will here state, the best water is from Big Guarnar, or opposite the coal property of the late Matthias Bruen, to the mouth of the Kanawha river, at Point Pleasant, on the Ohio river. The water is deep at the mouth of Guarnar, and from that to the Ohio; it is also free from shoals, only one, that is Red House. When the Kanawha and Ohio are called *dead low* by boatmen, the first named river affords more water, from 3 to 8 inches, than the Ohio.

Perhaps it will not be amiss for me to state, that last year I was employed by Col. John R. Garland, to command his tow-boat "Winifried," running from Winifried mines in Kanawha county, Va., to the city of Cincinnati, and the obstacles I had to encounter were all above the mouth of Guarnar.

WM. JOHNSON.

January 2d, 1857.

I, Wm. P. Wright, reside at Red House Shoals, Putnam county, State of Virginia. I am a pilot at this time on steamboat Aurelia Wood. I have been engaged in steamboating on the Kanawha and Ohio rivers for 25 years. I hereby certify, that generally the Kanawha river affords more water than the Ohio river. This river (Kanawha) is navigable for boats drawing from three to four feet of water at least two-thirds of the year, and generally there is no obstacle preventing boats from ascending the Kanawha as high as the Big Guarnar or opposite the coal banks of the late Mr. Bruen.

Coal or other flat-boats can go out at almost any time drawing from 20 inches to 4½ feet. I will here state the best water on this river is from Big Guarnar to the mouth of the Kanawha; fewer accidents have happened to boats (flats) than on any other parts of the river.

Given under my hand, this 2d day of January, 1857.

WM. P. WRIGHT.

The Kanawha and Ohio below Point Pleasant generally afford an average period of 200 days, with sufficient depth of water and freedom from ice for the shipment of coal to markets below, while from Pomroy, West Columbia, and points above, the period for shipping is much shorter. These lands *do*, therefore, possess a cheap and reliable water communication to the great markets where the coal will be wanted.

But it makes no difference how abundant and valuable the coal may be, and how favorably situated for river navigation, in order that investments in coal-lands may be profitable, there must be, in the *third place*, a reliable market at remunerating prices.

The market for this coal is all the towns and cities along the whole length of the Ohio River below the mouth of the Kanawha to Cairo, and the Mississippi to New Orleans—all the steamboats which ply upon these waters—the numerous towns in the interior—receiving their supplies of coal from these rivers, and the nine hundred and fifty-six sugar-houses on the banks of the lower Mississippi. The population on and contiguous to the Ohio and Mississippi rivers, which depends on these rivers for their supply of coal, is not less than 7,500,000, and is increasing with wonderful rapidity. The whole valley of the Ohio is yet scarcely out of its infancy, it does not number 25 persons to the square mile, while Massachusetts numbers 127.

Cincinnati is 200 miles below this property, and has now, including Covington and Newport, a population of about 210,000 souls, and her annual consumption of coal is 300,000 tons; her factories and furnaces, though yet in their infancy, consume at least two thirds of this amount. All the other towns and cities on the river to New Orleans, a distance of 1714 miles, consume from the Putnam County mines at least one million of tons—New Orleans for city consumption and steamers consumes at least 300,000 tons.

But the steamboats, which ply on the Ohio and Mississippi rivers, furnish a very important market for a large amount of coal, and for which they always pay cash. The number of steamers, plying between this property and New Orleans, is over 700—and they will all use coal *exclusively* for fuel, whenever they can get it, because it is much cheaper than wood, and because there are other important advantages in its use over wood. The boats now use all they can get. The demand from this source is equal to at least half a million tons annually.

One first-class steamer, in a single trip from Louisville to New Orleans and back, will consume *eleven hundred* cords of wood at a cost of $3,575. If she used coal the cost would be $2,475, thus effecting a saving of $1,100 in a single trip, or $14,300 per season of thirteen trips.

Great, however, as is the quantity of coal required for steamers, it falls much below that required for *sugar-houses.* There are now nearly *one thousand* of these on the banks of the lower Mississippi, consuming over *one million* cords of wood, costing over *four millions* of dollars.

If coal should be substituted, it would require about 500,000 tons, costing about $3,000,000, thus saving in a single year $1,000,000. The Government also requires for Gulf services and other purposes South, over *one hundred thousand* tons, while the interior towns and factories to be supplied by the River will require 500,000 tons. At New Orleans and Mobile, on the Gulf of Mexico, is an extensive and increasing ocean traffic by steam vessels, not only to all parts of the Gulf of Mexico and the West Indies, but with the whole Atlantic seaboard of the United States, and also by means of the Chagres and Panama railroad with China and the whole Pacific coast of America, including the present enormous trade with California. A successful competition in price with English coal, could not fail to command this market. And if a constant supply of coal was kept at New Orleans, of a quality equal or superior to English coal, it seems reasonable to believe that Cuba would receive all her coal from us.

From the preceding statements, it is manifest that the *present* demand for coal is equal to at least 3,000,000 of tons per annum, and past experience shows that this demand will increase at the rate of at least 20 per cent. per annum, thus doubling the amount in five years; and notwithstanding the steady increase in the supply, the price of coal maintains an upward tendency, showing conclusively that the supply does not keep pace with the demand. Nor is there the smallest probability that the supply will, in many years to come, be so increased as to reduce the price below a profitable point.

Paradoxical as it may seem, it is perfectly certain that any extensive operations in the Western coal trade would rather advance than diminish the price, as a certainty of supply would induce new and extensive operations which otherwise would never be undertaken.

The product of all the mines in the West does not at present exceed *two millions* of tons annually, thus falling short of the present demand at least *one million* of tons. There will therefore be a demand for all the coal which can be mined for many years to come, even if the companies now operating and the capital employed should be double what it is at present.

The next inquiry will relate to the cost of production, and the price at which the coal can be sold, showing the profits which investments in this property may be expected to produce. There are few if any localities where there are greater facilities for mining coal, and where it can be mined at a less cost, than on this tract. The coal crops out on the hill sides; no shafts are to be sunk; there is a natural drainage, *and the first day's work of the miners* would produce coal for the market.

The mines are above the level of the river 62 to 137 feet, furnishing a gentle descent from the mouth of the mines to the river, a distance of one quarter to three quarters of a mile.

It is not necessary to remark here, at any length, on the unusual facilities that will attend mining operations in this district, compared with similar work in most countries, or to dwell upon its peculiar advantages. The latter are chiefly in consequence of the vicinity of a navigable stream, and the existence of a large number of workable seams, several of which could be operated on at once. The former arise from the absence of faults, the horizontality of the beds, the freedom of the coal from any troublesome liberation of dangerous gases, and the certainty that there can be no incidental expenses from incursions of water, owing to the position of the beds above the water-level. The expense of mining is thus more easily calculated, and a smaller margin is required for extras than in ordinary cases.

The actual cost of mining coal from these mines will not exceed 3½ cents per bushel—it may be done for 3; and it can be mined and delivered at Point Pleasant for not exceeding 5 cents per bushel, at Cincinnati for 6½ cents, and at New Orleans for 13 cents. And the minimum price of the coal when sold at the above points is, at Point Pleasant 7 cents per bushel, or $2.10 per ton; at Cincinnati 10 cents per bushel, or $3.00 per ton; and at New Orleans 17 cents per bushel, or $5.10 per ton. Should the Company, therefore, mine 300,000 tons annually which they will be able to do with great ease in perhaps the second or third year, at farthest—the account would stand thus: If the following quantities of coal were delivered and sold at the following points, or other places where the cost would be the same, viz.,

50,000 tons delivered to steamboats at Point Pleasant, at $1.50 per ton,	$75,000
150,000 tons delivered in Cincinnati, at $1.95 per ton,	292,500
100,000 tons " at New Orleans, at $3.90 "	390,000
Cost of delivering 300,000 tons	$757,500

Now, this will sell as follows:—

50,000 to steamboats, at $2.10 per ton, ...	$105,000	
150,000 to Cincinnati and other places, at $3.00 per ton, .	450,000	
100,000 at New Orleans, at $5.10 per ton, ...	510,000	1,065,000
Thus giving a clear profit per annum of		$307,500

affording a dividend of over thirty per cent. on a capital of one million of dollars invested. That this *can actually* be done, there is no reasonable doubt; but even if only *one half* the amount should be realized, there would still be a dividend of *fifteen* per cent. on a capital of one million of dollars. Nor would it require a long time to realize these profits. Preparations can be made, and coal can *actually* be placed in market in 4 to 6 months from the time ground is first broken. It cannot be expected, however, that the above amount would be mined the first year, probably not more than one-third of it; but *it would be done* the second or third year. Other companies not so favorably located, and which are restricted for want of capital, are earning highly, if not as large remunerating dividends as the above.

But in addition to the value of these lands for coal-mining purposes, they possess other and important elements of profit not yet noticed, in the superior *iron ore* and *beds of salt water* which they are believed to contain. No thorough examinations have been made respecting the iron ore, but it exists in large quantities on the property, and is believed to be of a very superior quality. It is intended to make a thorough examination of the ore at an early day.

In regard to salt, it is a fact that about 5,000,000 of bushels—nearly one-fourth of all the salt used in the United States, are manufactured on the Kanawha river and vicinity, near this property. No borings for salt have as yet been made on this estate. Still, experience has shown, that the whole bituminous coal field of the Kanawha Valley, extending across to Pomroy in Ohio, is underlaid by salines.

For the small sum of $40,000 an establishment can be erected and equipped for turning out at least 300,000 bushels of salt annually, at an expense not exceeding 16 cts. per bushel, including barrels and packing. The average price at which salt is sold at the pit is 35 cts. per bushel. At this price 300,000 bushels

would amount to - - - - - -	$105,000
Cost of production at 16 cts. - - - - -	48,000
Showing a profit of - - - - - -	57,000

much more than doubling the capital invested in the salt in a single year! !

But there is still another element of profit of *very great importance* in the quantity and value of the timber with which a large portion of these lands are densely covered. The most valuable timber on the lands is the *white oak*, *tulip*, *poplar*, and *the yellow pine.* The white oak is in great abundance, and is admirably adapted to ship-timber or staves for home consumption, as well as for the Mediterranean.

Dr. Locke, who made a thorough examination of these lands, and entered into some measurements of the timber, estimated the gross cash value of all the timber on the tract delivered on the Kanawha and Pocotalico, a tributary of the Kanawha, at more than $15,000,000. The net value of the timber, after deducting all expenses, would be *several millions* under any circumstances. Parties are now anxious to buy large portions of the land with the view of going into the lumber and stave business, which is highly profitable.

The soil of much of the land is good and well adapted to agricultural purposes, for the cultivation of tobacco, corn, wheat, for pasturage and the cultivation of the vine. Many parties are now waiting and anxious to purchase in small parcels what may be called the back or farming lands, to the extent of at least 15 to 20,000 acres, at satisfactory prices. In that portion of Virginia, the climate is remarkably healthy, living cheap, and as a place of residence it possesses many advantages. The original patent for these lands was issued by the Governor of Virginia, in 1796, and it has passed through but few hands since that time, remaining in the hands of one party alone about 40 years. The title has been thoroughly examined by the best lawyers in Virginia, who have pronounced it perfectly good and valid.

With a property, therefore, so favorably located, embracing a coal-mining capacity unbounded; iron ore, which may be of great value—the means of producing salt to any extent, and added to which is a market without limits for coal and salt—vast forests of most valuable timber, and an agricultural surface of 85 to 100,000 acres, there can surely be no more safe or promising investments offered to men, no matter where situated or of what pecuniary means.

Coal lands in the vicinity of Pittsburgh, Pomroy, and other points on the Ohio above this property, command $200 to $500 per acre. The West Columbia Company, owned mostly in Boston, is situated on the Virginia side of the Ohio River, about 20 miles above the mouth of the Kanawha, and therefore not remote from this property, has a capital of $800,000, and owns only 1300 acres of land which cost $200 per acre, with only a *five* feet vein of coal.

Thomas A. Dexter, Esq., of Boston, a large stockholder in the West Columbia Company, in a recent letter says, "I value my property in West Columbia Mining Company very highly. Our 1300 acres of land cost us 200 dollars per acre, and we consider it worth a great deal more. Coal lands near our estate on the Ohio are considered worth *three* to *five hundred dollars* per acre."

If coal producers, therefore, on the Monongahela and Youghiogheny, 250 to 300 miles above the Putnam mines, and also on the Ohio, above this property, can make good dividends from lands costing *two* to *five* hundred dollars an acre, what returns may not reasonably be expected from the Putnam county mines at the very low price at which the land will be given to a company! Will not the foregoing estimates be more than realized? No investments in this country pay better than those made in good coal and salt lands favorably located; these are articles which the *millions must have*, and the demand for which for domestic and manufacturing purposes is increasing beyond all precedent, with the rapidly increasing growth of the country.

A true and fair exhibition has thus been made in regard to this large and valuable property, and every intelligent man will see that there is here nothing visionary, but a solid basis for the capital proposed to be invested, and that while little or no risk can be incurred, under any circumstances, by embarking in the enterprise, there is almost an absolute certainty of unusually large profits. So thoroughly have the lands, the mines, and the whole subject been examined, and by such competent men, that everything necessary to an intelligent decision is already furnished. The character and standing of the gentlemen connected with the enterprise are such as to preclude the idea of any misrepresentations—they may make mistakes, but they are incapable of deceiving—and they are confident the results will bear them out in all the estimates and statements they have made. When the stock is taken, it will no doubt be the policy of the Company to sell at once large portions of the back or farming lands, reserving the mineral rights, and return the proceeds to the stockholders, and as soon as the mines are developed, sell also portions of the coal lands to other companies. In this way it is confidently believed that, in a few years, the whole capital can be returned, leaving the Company still the owners of a most valuable property, free of cost, to return them a large and perpetual annual income.